

# Discipline-Based Professional Teaching Standards

The following discipline-based professional teaching standards are for teachers of elementary education, English language arts, mathematics, music, physical education, science, social studies, special education, visual arts and world languages.

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## Discipline-Based Professional Teaching Standards For Teachers Of Elementary Education

### **I. Development, Learning and Motivation**

Elementary teachers know, understand and use major concepts, principles, theories and research related to the continuum of development of children from pre-kindergarten through early adolescence. They construct learning opportunities that support the development, learning and motivation of the individual child.

### **II. Curriculum**

Elementary teachers know, understand and use central concepts, tools of inquiry and structures of content for students across the elementary grades. They connect concepts, procedures and applications from content areas to build understanding, and encourage the application of knowledge, skills and ideas to real-world situations. Elementary teachers create meaningful learning experiences for various developmental levels that develop students' competence and skills:

#### **A. Literacy**

Elementary teachers know, understand and use concepts from reading, writing, language and child development, to teach reading, writing, listening, speaking, viewing and acting. Teachers help students use these concepts to construct meaning, to compose their own oral and written texts, and to interpret and respond to the compositions of others.

#### **B. Numeracy**

Elementary teachers know, understand and use concepts and skills inherent in numeracy to enable their students to represent physical events, work with data, reason, communicate mathematically, and make connections within math and to other content areas, as well as to the world around them, in order to solve problems.

#### **C. Science**

Elementary teachers know, understand and use concepts of science, including physical, life and Earth sciences and their interrelationships. They engage students in the inquiry process that involves asking questions, collecting data through the use of senses and simple measurement tools, evaluating information and presenting answers.

#### **D. Social Studies**

Elementary teachers know, understand and use major concepts and modes of inquiry from social studies to promote students' abilities to participate in a culturally diverse democratic society. They provide opportunities for students to investigate topics related to themselves, their families, their communities and the world around them.

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**E. The Arts**

Elementary teachers know, understand and use the content, functions and achievements of dance, music, theater and the visual arts as primary media for self-expression, communication, inquiry and insight among students.

**F. Health**

Elementary teachers know, understand and use the comprehensive nature of students' physical, mental, emotional and social well-being to create opportunities for students to develop knowledge, skills and practice necessary to achieve and maintain wellness.

**G. Physical Education**

Elementary teachers know, understand and use movement and physical activity as central elements to foster active, healthy lifestyles and to enhance the quality of life for students.

**III. Aspects of Character**

Elementary teachers know, understand and practice core ideals of caring, honesty, fairness, responsibility and respect for self and others. They create opportunities for students to work cooperatively, reach consensus, plan and carry out community service projects, and develop practical understanding of the requirements of these ideals.

**IV. Habits of Mind**

Elementary teachers foster dispositions that enable students to be lifelong learners and problem solvers. They cultivate students' abilities to persevere, think independently and be self-motivated and confident learners. Elementary teachers encourage their students to adapt to new situations, be open to new ideas, develop insight, be self-reflective, and be willing to have their work examined by peers in order to further learning.

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## Discipline-Based Professional Teaching Standards For Teachers Of English Language Arts

- I. Composing, Responding and Interpreting**  
English language arts teachers use their knowledge of the ways people build understandings through reading and writing, speaking and listening, viewing and acting, when they design instruction, interpret student performance and evaluate their teaching to help students reach understandings.
- II. Writing**  
English language arts teachers help students consider the many elements which influence a writing process – among them the writer's purpose and audience, models in the genre, and conventions of standard written English – and work through the steps which are part of a complex composing process.
- III. Reading Literature**  
English language arts teachers help students respond to a variety of texts, ideas, perspectives and styles as they study literature and expand their knowledge of themselves and the world.
- IV. Reading for Information**  
English language arts teachers help students develop, recognize and expand their reading strategies, and adjust them to suit the purpose, task and the text.
- V. Language Study**  
English language arts teachers help students understand the nature of language, apply the conventions of standard English language in oral and written communications, and adapt their use of language to meet the needs of different situations.
- VI. Materials for Instruction**  
English language arts teachers select and create materials based on instructional purpose, literary merit, impact of the medium, parameters of the curriculum and students' developmental needs.
- VII. Knowledge of Students**  
English language arts teachers use their knowledge of the development, backgrounds, interests and abilities which influence students' thinking, learning and use of language to make decisions.
- VIII. Teaching Strategies**  
English language arts teachers use a variety of teaching strategies to guide students in developing literacy, critical thinking and problem-solving abilities.

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**IX. Curriculum**

English language arts teachers help students develop concepts and skills that make them better able to respond, interpret and compose with increasing degrees of control and responsibility for their own learning.

**X. Environment**

English language arts teachers maintain environments that provide students with opportunities to work together to build understandings as they provide experiences with language similar to those they may encounter outside the classroom.

## Discipline-Based Professional Teaching Standards For Teachers Of Mathematics

### I. Mathematical Content

Teachers responsible for mathematics instruction at all levels understand the key concepts and procedures of mathematics, including ideas from number systems and number theory, geometry and measurement, statistics and probability, algebra and functions, discrete mathematics and concepts of calculus, and have a broad understanding of the K-12 mathematics curriculum.

### II. Mathematical Tasks

Teachers of mathematics pose tasks that provide the stimulus for students to think about mathematical concepts and procedures, their connections with other mathematical ideas, and their applications to real-world contexts. These tasks encourage students to reason about mathematical ideas, and to formulate, grapple with and solve problems.

### III. Mathematical Discourse

Teachers of mathematics orchestrate discourse that is founded on mathematical ways of knowing and ways of communicating. This discourse fosters the development of critical mathematics processes – problem solving, reasoning, communication and making mathematical connections – and influences students' dispositions toward doing mathematics.

### IV. Learning Environment

Teachers of mathematics are responsible for creating an intellectual environment in which mathematical thinking is the norm. Teachers create an environment that supports and encourages mathematical reasoning and encourages students to make conjectures, experiment with alternative approaches to solving problems, and construct and respond to the mathematics arguments of others.

### V. Analysis of Learning and Teaching

Teachers of mathematics use a variety of strategies to continuously monitor students' capacity and inclination to analyze situations, frame and solve problems, and make sense of mathematical concepts and procedures. Teachers use such information about students to assess not just how students are doing, but also to appraise how well the mathematical tasks, discourse and environment are working together to foster students mathematical power and what changes need to be made in response.

## Discipline-Based Professional Teaching Standards For Teachers Of Music

### I. Knowledge of Music

Music teachers research and are knowledgeable about a variety of music from diverse cultural traditions and historical periods, including contemporary. Key domains of knowledge include:

- representative musical works and composers;
- distinguishing characteristics of representative music genres;
- performance practices for representative music genres; and
- exemplary conductors, performers and performing groups.

### II. Applied Musicianship

Music teachers communicate about, respond to, create and perform music accurately and artistically. Key domains include the ability to:

- convey artistry and musical ideas through conducting and expressive gesture;
- respond to (select, analyze, interpret and evaluate the quality of) music and music performance with artistic insight;
- create (imagine, plan, make, evaluate, refine, present) improvised and/or composed melodies, accompaniments, arrangements and variations;
- perform (select, analyze, interpret, rehearse, evaluate, refine and present) a varied repertoire, and/or appropriate accompaniments;
- sight-sing simple melodies;
- perform music accurately and artistically from notation on at least one primary instrument; and
- demonstrate appropriate tone and performance techniques on a variety of secondary instruments, including voice, keyboard instrument, standard beginning-level band and orchestral instruments, and standard classroom instruments.

### III. Importance of Music

Music teachers draw on an understanding of the nature and significance of music and its relationship to other arts and disciplines, to communicate its aesthetic, educational and societal value.

### IV. Creating Music

Music teachers plan and provide sequential, developmentally appropriate instruction that empowers students to independently **create** (imagine, plan, make, evaluate, refine and present) music through improvisation, arranging, harmonization and composition. Music teachers help students develop the skills and understandings – aural, theoretical, notational, technical – and personal “voice” which provide the foundation for creating music that is both technically sound and expressive.

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## Discipline-Based Professional Teaching Standards For Teachers Of Music... (continued)

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### V. **Performing Music**

Music teachers plan and provide sequential, developmentally appropriate instruction that empowers students to independently **perform** (select, analyze, interpret, rehearse, evaluate, refine and present) music. Music teachers help students develop the skills and understandings – aural, technical, notational, stylistic, expressive – necessary to perform accurately and artistically.

### VI. **Responding to Music**

Music teachers plan and provide sequential, developmentally appropriate instruction that empowers students to independently **respond** to (select, analyze, interpret and evaluate) music. Music teachers help students develop the aural and theoretical skills and understandings, vocabulary and familiarity with representative musical examples that provide the foundation for understanding and communicating about music.

### VII. **Learning Environment**

Music teachers establish and maintain a positive environment, conducive to developing students' independent musicianship and future participation in music.

### VIII. **Reflection and Professional Growth**

Music teachers pursue lifelong learning through reflective practice, musical and professional development, and participation in music making.

### IX. **Leadership**

Music teachers help their school and community develop an appropriate vision of, and commitment to providing, a quality music/arts education for all students.



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## Discipline-Based Professional Teaching Standards For Teachers Of Physical Education

### **I. Content Knowledge**

Physical education teachers use their understandings of physical education content and concepts of the sub-disciplines of the field to support and encourage learner expression through movement and physical activity. Key domains of knowledge include:

- motor development and motor learning;
- exercise science, including biomechanics, physiology and kinesiology;
- physical activity and wellness;
- movement forms and concepts;
- sociology and psychology of movement; and
- legal and safety issues.

### **II. Growth and Development**

Physical education teachers use their understanding of how students learn and develop to provide opportunities that support their physical, cognitive and emotional development through physical activity.

### **III. Diverse Learners**

Physical education teachers understand how individuals differ in their approaches to learning and physical performance and design appropriate instruction adapted to allow all students to develop the skills and knowledge to feel success in and enjoy physical activity throughout their lives.

### **IV. Management and Motivation**

Physical education teachers use their understanding of the motivation and behavior of students and groups to encourage learners to participate in physical activity inside and outside of school and to promote mutual respect, support, safety and cooperative participation.

### **V. Planning and Instruction**

Physical education teachers plan and implement a variety of developmentally appropriate instructional strategies and activities that maximize learner participation in safe learning experiences for the purpose of developing physically educated students.

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## Discipline-Based Professional Teaching Standards For Teachers Of Science

### I. Science Nature and Content

Science teachers understand the main ideas of their disciplines and the processes by which scientific data is collected and theories are built. Key domains of knowledge are as follows:

- for teachers of *biology* – evolution, diversity and unity of life of earth, molecular and cellular biology, ecology and genetics;
- for teachers of *chemistry* – atomic, molecular and nuclear structure of matter, matter and energy transformations, chemical reactions and organic chemistry;
- for teachers of *earth science* – earth history and dynamics, earth's composition and natural resources, meteorology and astronomy;
- for teachers of *physics* – forces and motion; energy transformations; the nature of light, sound, electricity and magnetism; thermodynamics; and the nature of matter; and
- for teachers of *general science* – basic principles and concepts of the physical, life and earth sciences.

### II. Science Logic and Construction of Knowledge

Science teachers understand the various forms of scientific inquiry and create opportunities for students to develop independent, creative and critical scientific reasoning.

### III. Science Context and Applications

Science teachers understand the significance of scientific literacy in a modern society and create opportunities for students to apply their knowledge, solve problems, examine science-related issues and construct informed and carefully reasoned opinions.

### IV. Students' Diversity

Science teachers search for science materials and teaching strategies that encourage students with diverse abilities, interests and backgrounds to actively participate in the learning of science.

### V. Learning Environment

Science teachers develop science learning communities in which teacher and students ask questions, seek information and validate explanations in various thoughtful, creative and cooperative ways.

### VI. Instructional Resources

Science teachers use available time, materials, equipment and communication technologies in a safe environment to support students' scientific investigations.

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## Discipline-Based Professional Teaching Standards For Teachers Of Social Studies

### I. Social Studies Content Knowledge

Social studies teachers use their subject-matter knowledge and the disciplinary thinking that is at the heart of history /social studies to plan and promote meaningful and challenging learning connected to important social studies themes. Key domains of social studies content knowledge include:

- *United States history*, including major events and the way of life in each major era from Native American peoples before exploration through the 20th century;
- *world history*, including the study of both western and nonwestern civilizations from prehistory through the 20th century;
- *government/civics/political science*, including basic political concepts and political theory, the United States Constitution, other forms of government, and international relations;
- *geography*, including the themes of geography, map skills, and the study of physical, human and regional geography;
- *economics*, including fundamental economic concepts, microeconomic and macroeconomic principles, international economics and current economic issues; and
- *behavioral sciences*, including sociology, anthropology and psychology.

### II. Knowledge of Students

Social studies teachers use information regarding students' development and interests, backgrounds, family histories and traditions to guide their practice and to develop relationships with their students in order to provide all students an opportunity to learn history /social studies.

### III. Learning Environment

Social studies teachers provide a physically, emotionally and intellectually safe environment to promote active learning, questioning and the exchange of ideas and opinions, often concerning sensitive and/or controversial issues related to history /social studies.

### IV. Social Studies Skills

Social studies teachers ensure that all students have an opportunity to develop essential social studies skills (e.g., constructing informed positions on issues, expressing their positions and justifying their positions with reasoned arguments based on history /social studies content) and know that skills and content should be learned together.

### V. Integrated Teaching and Learning

Social studies teachers engage students in learning experiences that are integrated by establishing linkages, both within the themes and disciplines of history /social studies and across other academic disciplines.

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**VI. Challenging Teaching and Learning**

Social studies teachers promote students' use of inquiry (e.g., through the use of primary documents, case studies and debates) and critical thinking to explore history/social studies and ensure that all students have an opportunity to pursue challenging content knowledge and learning experiences.

**VII. Civic Competence**

Social studies teachers promote civic competence, social concern and responsibility through real-world applications of history/social studies learning and they help their students to develop the ability to make informed and reasoned decisions for the public good as citizens of a culturally diverse, democratic society in an interdependent world.

## Discipline-Based Professional Teaching Standards For Teachers Of Special Education

### I. **Content Knowledge**

Special education teachers must have a knowledge of:

- various disabilities, the impact of disabilities on classroom performance;
- the implementation of strategies to facilitate student learning and behavior management;
- negotiation and conflict resolution skills;
- the appropriate use of formal and informal assessment strategies and instruments;
- legal provisions, regulations and guidelines regarding student assessment;
- how students learn to read and respond to text; understanding of reading and writing as interactive processes;
- how students learn mathematics, including mathematical reasoning and problem solving, mathematical concepts, procedures and tasks;
- instructional materials including adaptive equipment and technological resources; and
- occupational/life skills curriculum and relevance to independent living and employment.

### II. **Collaboration**

Special education teachers work collaboratively in classroom settings as partners with other teachers and related service providers and share responsibility for meeting student outcomes, through the design and modification of instruction to meet the needs of students with and without disabilities.

### III. **Consultation within the School Community**

Special education teachers collaborate with members of the school community, conveying and receiving information, in the design and implementation of instructional and behavioral adaptations for students with disabilities.

### IV. **Instruction**

Special education teachers teach language arts, mathematics and occupational/life skills, and use their knowledge of learning strategies and adaptations to modify the instructional methods and materials of these and other subject areas to foster the independence of the student. Teachers know and use a variety of strategies and resources, including task analysis and other specialized instructional approaches, as well as a variety of materials and adaptive equipment, alternative and augmentative communications systems and assistive technology to meet students' particular learning needs and goals.

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**V. Students and Their Needs**

Special education teachers use their understanding of the impact of various disabilities on learning and classroom performance, as well as their knowledge of the continuum of education program options and services in the implementation of students' Individual Education Programs (IEP).

**VI. Assessment**

Special education teachers understand and use formal and informal assessment techniques, and they interpret and communicate the results of assessments to students, parents and colleagues to analyze and modify instruction, and to ensure the continuous cognitive, social, emotional and physical development of the learner.

**VII. Environment**

Special education teachers use their understanding of individual and group motivation and behavior to create learning environments that maximize opportunities for students' academic, behavioral and personal success.

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## Discipline-Based Professional Teaching Standards For Teachers Of Visual Arts

### **I. Knowledge of Visual Arts**

Art teachers research and respond knowledgeably to art forms, artists and works from diverse historical and contemporary cultures. Key domains of knowledge include:

- representative artists, art works, artifacts and objects in a variety of media;
- key characteristics of representative genres and styles from diverse cultures, peoples and historical periods;
- traditions in and influences of art, design and the making of artifacts; and
- art criticism and aesthetics.

### **II. The Making of Art**

Art teachers convey meaning through skillful art making in a variety of media. Key domains of knowledge include:

- a high level of technique and expressiveness in at least one visual medium; and
- appropriate technique and processes in a variety of visual media, including:
  - 2-dimensional (such as drawing, painting, print-making and photography),
  - 3-dimensional (such as sculpture, ceramics and crafts), and
  - computers and other electronic media (such as video and film).

### **III. Importance of the Visual Arts**

Art teachers understand the nature and significance of the visual arts and the connections to other arts, other disciplines and daily life to articulate the educational, communicative, historical and cultural values of the visual arts.

### **IV. Curriculum Planning**

Art teachers design comprehensive, sequential curriculum that is developmentally appropriate and empowers students to carry out the artistic processes of creating and responding to art.

### **V. Knowledge of Students**

Art teachers plan and implement instruction that reflects knowledge of students' artistic, intellectual and physical development.

### **VI. Instructional Resources**

Art teachers create, select and adapt a variety of appropriate art works, technologies and other resources to plan and support student learning.

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**VII. Instruction**

Art teachers use a variety of safe and developmentally appropriate art media, techniques, teaching methods and strategies to promote a high level of understanding and artistic achievement.

**VIII. Reflection and Professional Growth**

Art teachers pursue lifelong learning and improvement through reflective practice, artistic and professional development, and participation in art making.

**IX. Leadership**

Art teachers articulate and enhance the role of the arts and arts education in the school and community as well as demonstrate organizational skills and take an active role in educational decision making.



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## Discipline-Based Professional Teaching Standards For Teachers Of World Languages

### I. Content Knowledge

World language teachers demonstrate linguistic competence and cross-cultural proficiency in the language(s) they teach. They have the knowledge, awareness and ability to compare and contrast the home culture(s) and the target culture(s).

World language teachers understand the cumulative nature of language learning (i.e., language proficiency develops and expands, yet continues to build on all previous learning). Key domains of knowledge include:

- research in first- and second-language acquisition;
- general linguistics;
- current brain research; and
- various assessment models related to listening, speaking, writing and cultural understanding in the target language.

World language teachers demonstrate an understanding of the interdisciplinary base of world language instruction (e.g., language arts, history, the arts, mathematics, etc).

### II. Learning Environment

World language teachers create and maintain a nurturing learning environment that encourages risk taking and creative use of language. This linguistic learning environment embodies the practices, perspectives and products of the culture(s) being studied.

### III. Learners

World language teachers believe that all students have the potential to learn and be successful in acquiring and using language in and beyond the classroom. They recognize that students' development, linguistic backgrounds, abilities and interests influence their thinking, learning and use of language. They demonstrate awareness of student diversity and learn strategies to build understanding in the classroom.

### IV. Instruction

World language teachers use a variety of authentic<sup>9</sup> materials and cultural products, including technology and human resources. World language teachers understand that people use listening and speaking, reading and writing, viewing and performing as ways to build understanding. They help students to develop these skills in a variety of cultural contexts. They explore with students varied cultures in which the language is used as a medium of communication.

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<sup>9</sup> "authentic" means created by native speakers for native speakers